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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,307	10/10/2000	Mark J. Kittock	2028-174	4343

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EXAMINER

PICKARD, ALISON K

ART UNIT	PAPER NUMBER
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3676

DATE MAILED: 08/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/685,307

Applicant(s)

KITTOCK ET AL.

Examiner

Alison K. Pickard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 14 June 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Ernst (4,448,424).

Ernst discloses a clearance seal assembly in a pump comprising a stationary member 32 (housing or casing), a moving member 22 or 31 (piston), and a sealing member 35. The sealing member is disposed between the stationary and moving members. As seen in Figures 1 or 4, a bearing 38 or 13 is disposed between the piston and casing and establishes a fluid-tight relationship between the sealing member and the stationary member (col. 3, lines 12-15). The sealing member and moving member define a continuous and uniform gap 45. (Note: the gap is uniform along the confronting surfaces between 36 and 37.) The gap is sized to allow fluid to fill the gap but prevents the fluid from flowing through the gap under an operating pressure differential.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ernst in view of Holland (4,501,120).

As described above, Ernst discloses a sealing member forming a gap with a moving member. Ernst does not disclose that the sealing member and moving member are made of ceramic materials. Holland teaches making a clearance seal and piston of ceramic material. Holland teaches that ceramic is not temperature dependent and provides a “virtually dragless sealing action and long wear” (col. 4, lines 33-37). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the seal assembly of Ernst by making the seal and piston of ceramic material as taught by Holland to provide an improved assembly that is not affected by temperature and provides a dragless sealing action and long wear.

5. Claims 1, 3-7, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kostohris (5,493,954) in view of Ernst.

Kostohris discloses a seal assembly (pump) comprising a stationary member (housing or casing), moving member 14, and sealing member 34. The sealing member has a fluid tight relationship with the stationary member. The assembly comprises a removable, static seal 26 mounted between the stationary and sealing member to maintain the fluid tight relationship therebetween. A bearing is disposed between the piston and casing. The bearing can be either ring 38 or the element between the spring and seal in Figure 2. Kostohris does not disclose a uniform and continuous gap between the seal and moving member. Ernst teaches forming a uniform and continuous gap between a seal and moving member. Ernst teaches forming a gap such that fluid can fill the gap but there is “no net flow” toward the high-pressure side (see col. 4,

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lines 57-58). Ernst teaches that this gap allows lubrication of the seal but ensures there is no sliding contact between the rod and seal, thus the life of the assembly is increased. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the assembly of Kostohris with the gap as taught by Ernst to improve the seal efficiency and life while preventing flow of the fluid past the seal.

Regarding claim 4, the sealing member 34 is considered integral with the stationary member 11. The sealing member is secured within the stationary member via seal 26 and ring 13. Also, the term “integral” does not require a unitary one-piece structure. See *In re Kohno*, 391 F.2d 959, 157 UPSQ 275 (CCPA 1968).

Response to Arguments

6. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

As described above, Ernst discloses (and teaches) a uniform and continuous gap. The gap is filled with fluid, but does not let fluid “flow” through. This keeps the seal lubricated while preventing contact between the seal and rod. The seal has a fluid tight relationship with the housing. Kostohris also discloses a fluid tight relationship between a seal and housing. Kostohris uses a static seal between the two to prevent fluid from passing therebetween.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alison K. Pickard whose telephone number is 703-305-0882. The examiner can normally be reached on M-F (9-6:30), with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 703-308-3179. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-8729327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-1113.

Alison K. Pickard
Examiner
Art Unit 3676



AP
August 21, 2002